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**Thermal insulation products —  
Exterior insulation and finish systems  
(EIFS) —**

**Part 2:  
Installation**

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 163, *Thermal performance and energy use in the built environment*, Subcommittee SC 3, *Thermal insulation products*.

A list of all parts in the ISO 17738 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

This document provides minimum installation requirements for an exterior insulation and finish system where the materials meet the requirements of ISO 17738-1, and where the installation meets the requirements for design in accordance with ISO 17738-3.

Exterior insulation and finish systems (EIFS) are a unique insulated cladding that consists of a water resistive barrier system (WRB) over the substrate, a drained cavity and an insulated cladding that is bonded adhesively to the WRB, covered with a base coat, mesh and a finish material.

A risk management process may recommend additional requirements for the establishment of a site quality assurance programme (SQAP). Additional information related to a SQAP is included in [Annex B](#).

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# Thermal insulation products — Exterior insulation and finish systems (EIFS) —

## Part 2: Installation

### 1 Scope

This document specifies requirements for the installation of exterior insulation and finish systems (EIFS) for wall applications using material which meet the materials requirements of ISO 17738-1 and the design requirements of ISO 17738-3. This document further includes installation requirements for the EIFS materials that include a water resistive barrier (WRB) and decorative projections as part of the cladding system for walls.

This document does not include requirements for the structural design of the substrate/building structural members or for the integrity of the substrate/building structural members to which the EIFS is to be attached, nor the requirements for installation or repair of the substrate/building structural members before installation commences.

This document does not include requirements for the competence that an EIFS installer needs for installation of the system.

The installation of EIFS on horizontal surfaces exposed to direct precipitation is outside the scope of this document.

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### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 7345, *Thermal performance of buildings and building components — Physical quantities and definitions*

ISO 4624, *Paints and varnishes — Pull-off test for adhesion*

ISO 8873-1, *Rigid cellular plastics — Spray-applied polyurethane foam for thermal insulation — Part 1: Material specifications*

ISO 8873-2, *Rigid cellular plastics — Spray-applied polyurethane foam for thermal insulation — Part 2: Application*

ISO 9229, *Thermal Insulation — Vocabulary*

ISO 17738-1, *Thermal insulation products — Exterior insulation and finish systems — Part 1: Materials and systems*

ISO 17738-3, *Thermal insulation products — Exterior insulation and finish systems — Part 3: Design requirements*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 7345, ISO 9229 and ISO 17738-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

### 3.1

#### **aesthetic reveal**

groove cut into the thermal insulation board for decorative purposes only

### 3.2

#### **back-wrap**

encapsulate the exposed edge of the thermal insulation board by securing a strip of *glass fibre reinforcing mesh* (3.9) to the substrate and embedding it in base coat around the board edge onto the face of the insulation

### 3.3

#### **edge-wrap**

encapsulate the edge of thermal insulation board by embedding a strip of *glass fibre reinforcing mesh* (3.9) in base coat and lapping it onto the face of the insulation board and onto the edge of an opening

### 3.4

#### **EIFS contractor**

legal entity (corporate or personal) responsible for the site installation of EIFS

### 3.5

#### **EIFS moulding**

insulation profile that is mounted on or incorporated into the thermal insulation boards, covered by the lamina integrated into EIFS

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### 3.6

#### **expansion joint**

joint designed to permit movement due to expansion and contraction of any part of the system

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expansion and contraction

Note 1 to entry: See ISO 9229.

### 3.7

#### **flashing**

continuous material(s) that stops the vertical flow of water within a wall assembly or system and directs the water, via gravity, to the exterior of the cladding

### 3.8

#### **pot-life**

period of time that a material maintains its workable properties after it has been mixed

### 3.9

#### **glass fibre reinforcing mesh**

woven or non-woven glass fibre fabric material of EIFS that is encapsulated in the base coat to strengthen EIFS

### 3.10

#### **pre-wrap**

encapsulate the exposed edge of the thermal insulation board with base coat and mesh, lapping onto the front and back of the insulation board before installation

### 3.11

#### **transition membrane**

component of the *WRBA* (3.12) that maintains continuity of the WRB at joints and openings in the substrate that cannot be bridged with the LA-WRB



**3.12****water resistive barrier assembly  
WRBA**

materials possessing water resistant properties that are installed over substrates to create a continuous drainage plane preventing water penetration into the wall assembly and draining that water to the exterior of the wall cladding

EXAMPLE LA-WRB, *transition membranes* (3.11), *flashing* (3.7).

**4 General requirements**

**4.1** For each project, the EIFS contractor shall obtain all the materials and components required for the EIFS cladding from a single EIFS manufacturer.

**4.2** The EIFS contractor shall incorporate the design requirements outlined in ISO 17738-3 into the EIFS installation.

**4.3** The EIFS contractor shall obtain information, in written or electronic form, from the EIFS manufacturer, and shall keep this information at the project site:

- a) Detailed description of the EIFS materials and components to be used for the specific project installation.
- b) Instructions for safe handling, use and disposal of the materials or components.
- c) EIFS manufacturer's installation instructions.

**4.4** The EIFS contractor shall follow the EIFS manufacturer's installation instructions throughout the EIFS installation process.

**4.5** Before commencing installation, the EIFS contractor shall verify that the materials and components on site comprise the EIFS declared by the manufacturer as meeting the requirements of ISO 17738-1. This can be accomplished by reference to a materials list or other documentation.

**4.6** EIFS shall not be used at locations where the continuous service temperature exceeds +75 °C.

NOTE Service temperatures more than +75 °C can occur in proximity to chimneys, heater vents, steam pipes, and materials of a dark colour that absorb solar radiation.

**4.7** Materials and surfaces shall be protected from staining or damage by wet EIFS materials during installation.

**4.8** The installed EIFS shall be protected from water for a period required by the EIFS manufacturer.

**4.9** EIFS shall be applied when:

- a) the ambient temperature or surface temperature of the material is 4 °C or greater;
- b) the ambient temperature or surface temperature of the material 40 °C or less.

**4.10** When conditions are outside the requirements of 4.9 and protection (tenting, shading and supplemental heat) is used, this protection shall be maintained:

- a) for a minimum period of 24 h before installation,
- b) during the installation of EIFS, and

c) for a minimum period of 24 h after installation.

## **5 Materials storage and handling**

**5.1** The EIFS contractor shall verify and record that all materials delivered to the project site are in packages, containers or bundles that are individually labelled with the EIFS manufacturer's name, product name, product description, ISO 17738-1, country of manufacture, and lot or date code identification for the materials and components.

**5.2** Materials that are visibly damaged, frozen, in any way defective, or that are past the EIFS manufacturer's shelf life shall not be used and shall be promptly removed from the site.

**5.3** Portland cement and other dry-mix components shall be protected, kept dry, kept off the ground, under cover (in addition to the product's packaging), and away from damp walls and surfaces.

**5.4** Thermal insulation boards shall be kept in their original packaging until installed. They shall be stacked flat, fully supported, off the ground, and under a cover designed to minimize water and ultraviolet radiation (UV) exposure, with care taken to avoid damage to edges, ends, or surfaces.

**5.5** All materials shall be protected from prolonged exposure to excessive heat or cold. Liquid materials shall be transported and stored such that the material temperature never falls below 4 °C or exceeds 65 °C.

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## **6 Substrate**

**6.1** EIFS shall be installed on substrate consistent with the EIFS manufacturer's allowable substrates, as determined through ISO 17738-1 testing and specified in the contract documents.

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**6.2** EIFS shall be installed on a substrate that is firm, structurally sound, and undamaged. EIFS shall not be installed on broken, cracked, rotted, decayed or delaminated substrate sheathing boards, nor on loose, spalling or crumbling concrete or masonry unless repaired before the installation starts.

**6.3** Newly constructed cast-in-place concrete and unit masonry substrates shall be allowed to cure according to the desired strength before the installation of EIFS. Unless otherwise specified, curing time shall be a minimum of 28 days. Repaired areas on existing (aged) walls shall cure for the 28 days, unless the material used to repair is specifically designed to cure rapidly.

**6.4** EIFS shall be installed on a substrate free of any surface contaminants that could affect the adhesion of the EIFS, such as oil or grease, dust, form-release agents, curing compounds, paint, wax, glazing, water, moisture, efflorescence, laitance, frost, etc. These contaminants shall be removed before commencing the installation of EIFS.

**6.5** All substrates shall be cleaned to remove loose dirt and dust using methods appropriate for the project.

**6.6** Efflorescence and laitance on concrete, masonry, stucco, or clay tile substrates shall be removed prior to the liquid-applied water resistive barrier (LA-WRB) installation. All loose particles and cleaner residue shall be removed by rinsing with tap water. The surface shall be allowed to dry prior to LA-WRB installation.

**6.7** Paint on concrete or masonry surfaces shall be removed.

**6.8** The EIFS shall only be installed on dry substrates with no visible moisture such as condensation, dew, or frost.

**6.9** EIFS shall not be installed on a concrete or masonry substrate where there are unrepaired cracks greater than 2 mm in width.

**6.10** EIFS shall be installed on a substrate that is true in all directions to within 6 mm over 2 400 mm.

**6.11** The substrate surface temperature shall be not less than 4 °C nor greater than 65 °C during the installation, drying and curing of the LA-WRB, unless having demonstrated tolerance to such conditions during ISO 17738-1 assessment.

**6.12** The EIFS contractor shall visually confirm and record that the substrate is acceptable prior to starting and throughout the installation of the LA-WRB. Installation of the LA-WRB shall not proceed if the EIFS contractor deems the substrate unacceptable.

## 7 Mixing

**7.1** Clean containers, free of foreign residue and/or materials shall be used when mixing materials.

**7.2** Mixing shall be done with a clean, rust-free, corrosion-resistant paddle, mixing blade or other equipment that minimize air entrainment with a rotational speed less than 500 r/min.

**7.3** Determine the quantity of dry materials mixed by weight. Record the weight of the materials of each batch mixed on site.

**7.4** Use tap water that is free from deleterious materials.

**7.5** Mix factory-blended liquid materials (LA-WRB, base coat, finish coat and primers) prior to installation.

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**7.6** Only additives supplied or specified by the EIFS manufacturer and tested in conformance with ISO 17738-1 shall be used.

**7.7** Mix and install materials that cure or dry within the pot-life limitations. Mixing containers shall be kept closed when not used.

## 8 Installation of the liquid-applied water resistive barrier system

### 8.1 General

**8.1.1** Gaps of 2 mm or less do not need to be treated. Treat gaps greater than 2 mm but not greater than 6 mm by filling with a caulking material supplied or approved by the EIFS manufacturer. Gaps greater than 6 mm shall have a transition membrane installed, supported by a backer rod, sealant foam or similar material. The transition membrane shall be of sufficient width to lap both sides of a gap by a minimum of 50 mm.

**8.1.2** The LA-WRB shall be installed in two coats over the entire substrate to result in the thickness specified. Allow the LA-WRB to dry before the installation of the second coat or installation of the thermal